



RS66310R9 – LEVEL IT System

Fits 2020 – 2019 Chevrolet / GMC 1500 Pickup 4WD & 2WD*

RS66311R9-1 – 3” Suspension System

Fits 2020 – 2019 Chevrolet / GMC 1500 Pickup 4WD Only*

*Excludes Trail Boss, Electronic Suspension.

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION — IF INSTALLING RS66311R9 OR RS64302 READ ALL INSTRUCTION BEFORE BEGINNING INSTALLATION —

This suspension system was developed using LT285/70R17 tires on a 5”backspacing wheel.

Before installing tires and wheels, consult your local tire and wheel specialist.

⚠ WARNING: Carefully read, understand and follow the instructions provided in this manual, and keep it in a safe place for future reference. If you have any doubt whatsoever regarding the installation or maintenance of your Rancho suspension system, please see your retailer for assistance or advice. Failure to follow the warnings and instructions provided herein can result in the failure of the suspension system, or can cause you to lose control of your vehicle, resulting in an accident, severe personal injury or death.

These instructions should remain in the vehicle glove box for future reference

P/N	DESCRIPTION	QTY.
RS999846UMM	Rancho Quick Lift Strut, Unloaded	2
137400013	Jounce Bumper	1
P01763	Parts Pack	1
160300057	Isolator	1
103300051	Bumper Cap Assembly	1
P01577	Parts Pkg	1
104461955	Bolt, M10-1.5 X 65mm	2
113900067	Nut, M10-1.5	5
FORM01188T	Instruction Sheet - RS999846UMM	1
RS176782	Slotted Sway Bar Spacer	2
RS860804	Sub Assy, Sway Bar Spacer	1
RS7875	HHCS, M10-1.50 X 50MM	4
RS7755	Washer, 3/8 USS	4
RS770064	Washer, M10	4
RS94180	Information Pack	1
RS94177	Rollover Warning Label	1
RS94119	Consumer/Warranty Information	1
R-RM0082-1112	Warranty Tag	1
RS780281	Rancho Decal - Color	1
RS780294	Red Rancho Die Cast Decal	1
RS780294B	Black Rancho Die Cast Decal	1
RS89310	Instructions – RS66310R9	1

4) On the passenger side, use a 10MM and 15MM socket and extension to remove the two screws holding the plastic wire harness housing to the frame. The screws are located behind the housing. Push the plastic wire harness housing up off the strut upper mounting studs on both the passenger and driver side. The housing is held in with a clip and may need to be pried up. See Illustration 3 and Illustration 4.

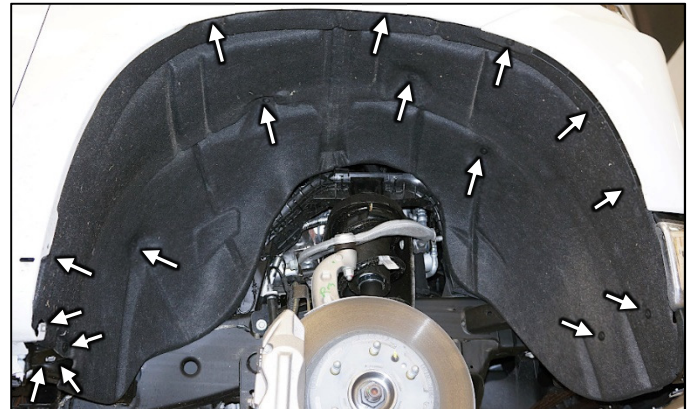


Illustration 2

STRUT REMOVAL

1) Park the vehicle on a level surface. Set the parking brake and chock rear wheels. Measure and record the distance from the center of each wheel to the top of the fender opening. See Illustration 1.

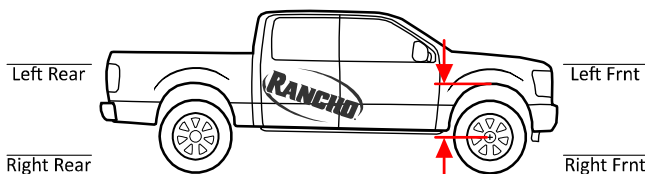


Illustration 1

2) Raise the front of the vehicle and support the frame with jack stands. Remove the front wheels and set them aside.

3) Remove passenger mud guard and side inner fender liner using an H15 Torx, 10MM socket and a clip remover. See Illustration 2.

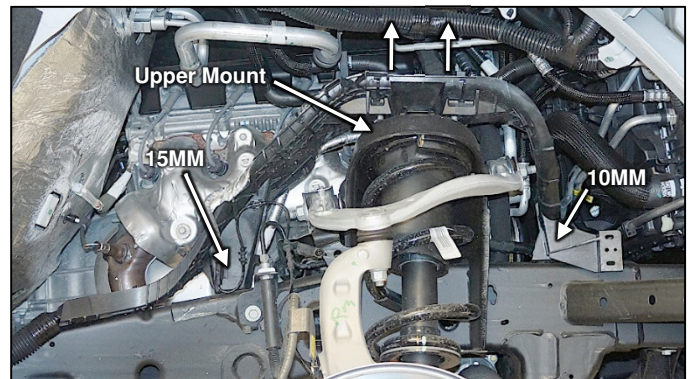


Illustration 3

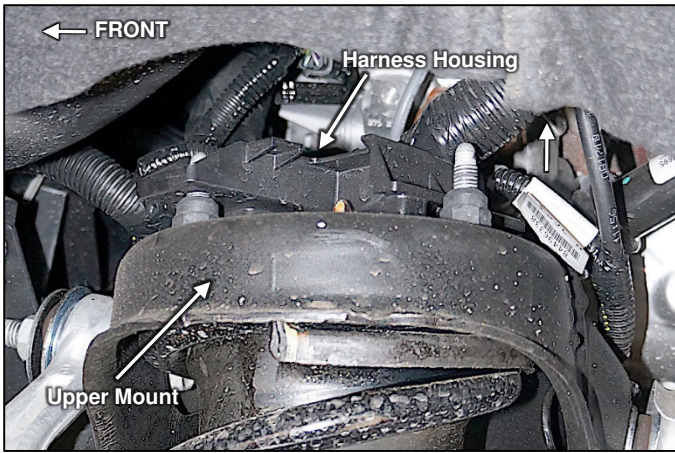


Illustration 4

5) Remove sway bar at frame mount. Allow sway bar to hang from end links. See Illustration 5 and Illustration 7.

NOTE: It is best to work on only one side of the vehicle until you get to "SWAY BAR SPACER INSTALLATION". This way you can refer to the other side if questions arise about the way it was assembled.

6) Remove brake hose and ABS wire brackets from upper control arm, steering knuckle and frame. See Illustration 6 and Illustration 7.

7) Remove CV axle nut. Push or use a mallet to tap on end of CV axle to confirm it slides freely in hub. See Illustration 6.

8) Loosen outer tie rod stud nut. Using appropriate puller, separate then remove tie rod stud from steering knuckle. See Illustration 6.

9) Loosen but do not remove upper ball joint stud nut. If required, use puller to separate upper ball joint stud from steering knuckle. See Illustration 6 and Illustration 7.

10) Use a strap or wire around the top of the steering knuckle and the droop stop to keep the knuckle from swinging out and damaging the CV boot in the next steps. See Illustration 7.

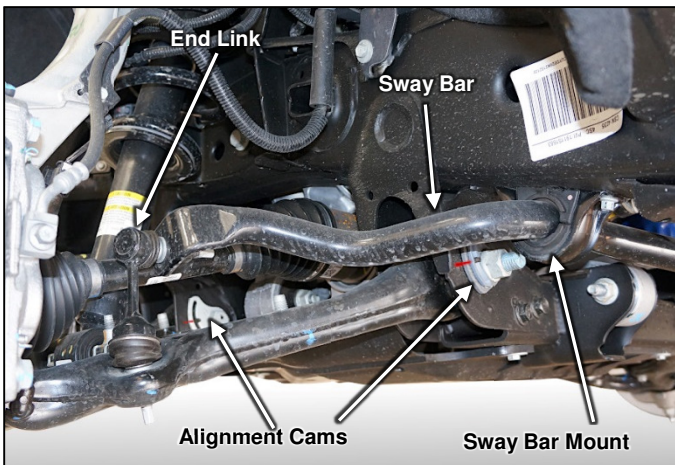


Illustration 5

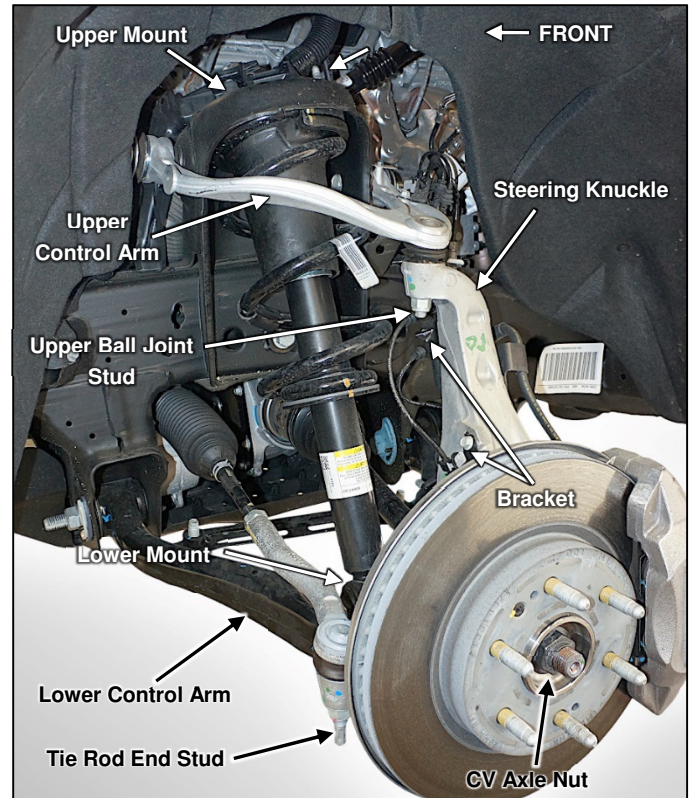


Illustration 6

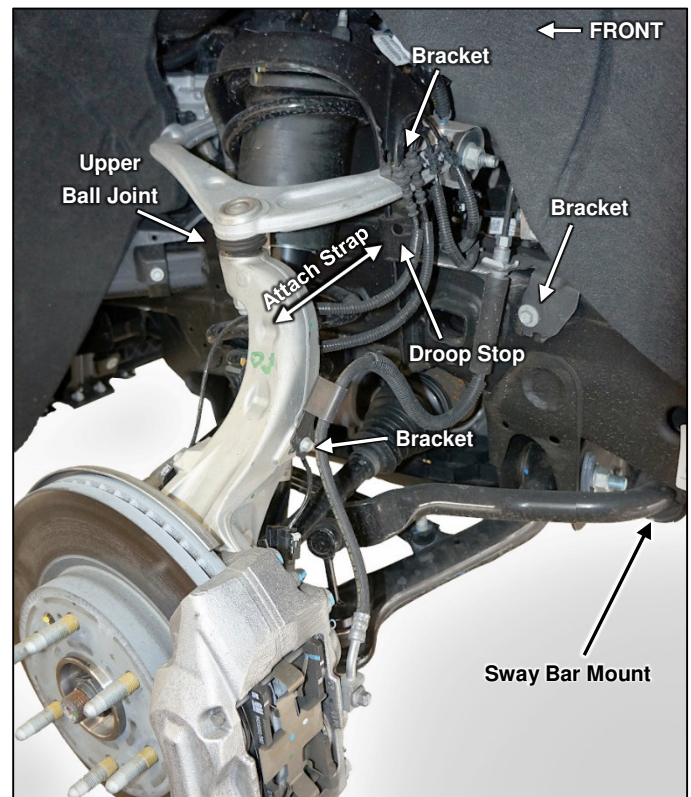


Illustration 7

⚠ WARNING: CONTROL ARM WILL SPRING UP WITH GREAT FORCE WHEN BALL JOINT SEPARATES FROM KNUCKLE. USE PRY BAR TO HOLD DOWN AND SLOWLY LIFT BALL JOINT STUD OUT OF KNUCKLE. WHEN REMOVING BALL JOINT STUD NUT.

11) Pry down on upper control arm, remove ball joint nut, and remove ball joint stud from knuckle.

CAUTION: Do not allow the knuckle to swing out and pull on CV axle boots. The boots can separate from the housing or tear.

Use a strap or wire to attach top of steering knuckle to droop stop, and push the end of the CV axle partly through the hub to relieve tension on boot.

12) Support lower control arm with jack.

13) Remove all three upper strut mounting nuts.

CAUTION: Do not turn center strut rod nut!

14) Remove lower strut mounting bolts.

15) Remove strut from vehicle. Lower jack if required.

CAUTION: Take care not to damage CV boot with end of strut, or pull CV boot off of housing. Push the end of the CV axle partly through the hub to relieve tension on boot.

STRUT REPLACEMENT

⚠ WARNING: Follow instructions and warnings supplied with strut.

1) Follow instructions supplied with strut to install supplied spring seat, isolator, and bump stop on new Rancho strut.

If installing RS663119R9 or RS64302, install coil spring spacer RS176959 between spring seat and isolator (see instruction RS84302).

2) Reference mark top mount, coil spring and strut. See Illustration 8.

⚠ WARNING: SPRING IS UNDER COMPRESSION LOAD WHEN INSTALLED. ATTEMPTS TO REMOVE SPRING WITHOUT PROPERLY RESTRAINING THIS LOAD MAY RESULT IN INJURY. NEVER REMOVE THE CENTRAL LOCK NUT OF THE UPPER MOUNTING PARTS BEFORE THE SPRING IS COMPRESSED.

IF A SUITABLE SPRING COMPRESSOR TOOL IS NOT AVAILABLE, OR A QUALIFIED OPERATOR IS NOT AVAILABLE, MOST REPAIR SHOPS CAN SWAP THE COIL FOR A SMALL CHARGE.

3) Using a suitable spring compressor tool, compress spring slightly to relieve initial tension.

4) With initial spring tension relieved, loosen rod nut slightly. Compress spring until loose from lower spring seat and then completely remove nut.

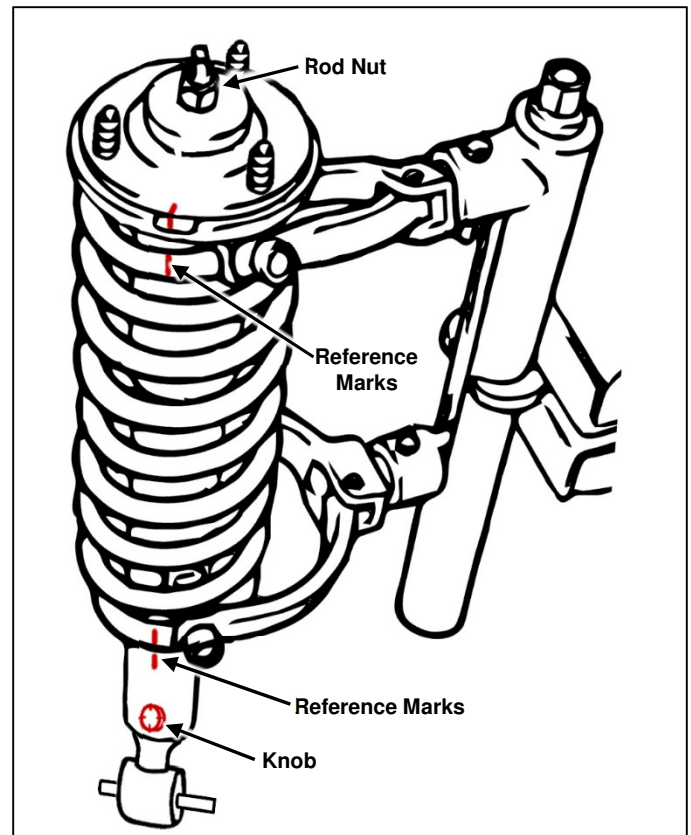


Illustration 8



Illustration 9

5) Remove all upper mounting parts and spring from strut assembly; save for reuse. Note position of all parts as removed to ensure proper installation of replacement parts. Inspect all original parts as removed for wear and damage. Obtain replacements when necessary.

6) Install new strut on spring and upper mount assembly using reference marks to align components. Spring may need to be compressed more to fit new Rancho strut. See Illustration 8 and Illustration 9. Torque center rod nut to 41 lb-ft.

NOTE: Knob faces to outside of vehicle.

⚠ WARNING: DO NOT OVER TIGHTEN ROD NUT. EXCESSIVE TORQUE CAN DAMAGE THE THREADS ON THE NUT OR PISTON ROD. USE TORQUE VALUE FROM OE MANUFACTURER.

7) Slowly release spring compressor checking for proper alignment of components.

NOTE: If installing RS663119R9 or RS64302, refer to instruction RS84302 to install new upper control arm.

**— Steps 8-12 applicable only to vehicles with —
NON-TRAIL BOSS, OE height front struts.**

If replacing an OE height, NON-Trail Boss front strut, the control arm bushings must be “re-set” to eliminate tension on them at the new ride height. The vehicle will ride lower than expected and bushings will fail prematurely if control arm mounting hardware is not loosened and re-torqued at the new ride height.

8) Raise lower control arm and loosely reattach steering knuckle to upper control arm.

9) Mark location of all eight lower control arm alignment cams to frame. See Illustration 5.

10) Loosen upper and lower control arm mounting bolts until control arm bushing can move freely in frame mounts.

11) Use jack to raise lower control arm until the spindle-to-fender measurement is 2.0” greater than OE measurement from step 2.

12) Re-align lower control arm cams with marks and torque lower and upper control arms to OE specifications.

13) Strap knuckle to frame again and separate upper ball joint from knuckle.

14) Lower jack and install strut in upper and lower mount on vehicle using OE hardware. Torque hardware to OE specifications.

CAUTION: Take care not to damage CV boot with end of strut, or pull CV boot off of housing. Push the end of the CV axle partly through the hub to relieve tension on boot.

15) Pry down upper control arm and attach upper ball joint stud to steering knuckle using OE hardware. Remove tie wire or strap from knuckle and frame. Torque hardware to OE specifications.

16) Attach outer tie rod end to steering knuckle with OE hardware. Torque hardware to OE specifications.

17) Pull out on end of CV axle and re-install CV axle nut. Torque to OE specifications.

18) Re-install brake hose and ABS wire brackets in original locations.

19) Re-attach driver side wiring harness housings back over strut upper mounting studs.

20) Re-position passenger side wiring harness housings back over strut upper mounting studs and attach to frame using OE hardware.

21) Reinstall passenger side inner fender liner.

SWAY BAR SPACER INSTALLATION

1) Loosely install driver side sway bar mount with spacer RS176782 between mount and frame. Use M10 hardware supplied in bag RS860804 (larger 3/8” USS washers are not used). See Illustration 10.

2) Install passenger side sway bar mount with spacer RS176782 between mount and frame.

3) Torque hardware to OE specifications.

LOWER VEHICLE

1) Install front wheels.

2) Turn the front wheels completely left then right. Verify adequate tire, wheel, brake hose clearance. Check for proper CV axle operation and clearance. Inspect steering and suspension for tightness and proper operation.

3) Inspect and rotate all axles and drive shafts.

4) Lower vehicle to ground.

5) Torque lug nuts to 140 ft. lbs.

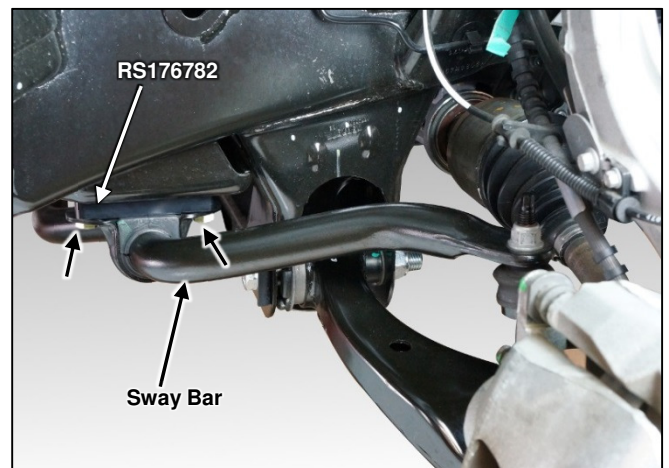


Illustration 10

FINAL CHECKS & ADJUSTMENTS

- 1) Turn the front wheels completely left then right. Verify adequate tire, wheel, and brake hose clearance. Inspect steering and suspension for tightness and proper operation.
- 2) Ensure that the vehicle brake system operates correctly.
- 3) Readjust headlamps and have vehicle aligned at a certified alignment facility.

Recommended Alignment Specifications

Caster (degrees): $4.5^{\circ} \pm 1.0^{\circ}$

Camber (degrees): 0° - neg $.3^{\circ}$

Sum Toe In (degrees): $.1^{\circ} \pm .2^{\circ}$ (.1" in – .05" out)

- 4) Park the vehicle on a level surface. Set the parking. Measure and record the distance from the center of each wheel to the top of the fender opening. See Illustration 11.

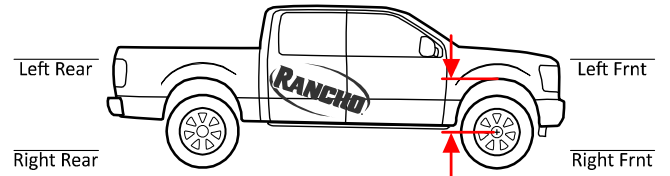


Illustration 11

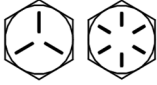
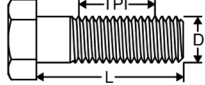
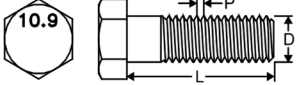
Vehicle Torque Specifications

Upper Control Arm	89 LB-FT + 45-60 degrees*
Lower Control Arm	133 LB-FT + 90-105 degrees*
Strut Rod Nut	41 LB-FT
Upper Strut Mounting Nuts	37 LB-FT
Lower Strut Mounting Bolts	37 LB-FT
Upper Ball Joint Nut (OE Ball Joint)	26 LB-FT + 60-75 degrees*
Upper Ball Joint Nut (Rancho Upper Control Arm)	80 LB-FT
Tie Rod End Ball Stud Nut	26 LB-FT + 85-100 degrees*
CV Axle Nut	188 LB-FT
Sway Bar Mounting Bolts	37 LB-FT
Wheel Lug Nuts	140 LB-FT

* Torque fastener to specification, then turn nut specified amount

STANDARD BOLT TORQUE AND IDENTIFICATION

INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 8.8	Class 10.9	Class 12.9
5/16	15 LB-FT	20 LB-FT	M6	5 LB-FT	9 LB-FT	12 LB-FT
3/8	30 LB-FT	35 LB-FT	M8	18 LB-FT	23 LB-FT	27 LB-FT
7/16	45 LB-FT	60 LB-FT	M10	32 LB-FT	45 LB-FT	50 LB-FT
1/2	65 LB-FT	90 LB-FT	M12	55 LB-FT	75 LB-FT	90 LB-FT
9/16	95 LB-FT	130 LB-FT	M14	85 LB-FT	120 LB-FT	145 LB-FT
5/8	135 LB-FT	175 LB-FT	M16	130 LB-FT	165 LB-FT	210 LB-FT
3/4	185 LB-FT	280 LB-FT	M18	170 LB-FT	240 LB-FT	290 LB-FT

 <p>5-Grade-8</p>	 <p>$\frac{1}{2}$-13 x 1.75 HHCS</p>	<p>D = Nominal Diameter TPI = Threads Per Inch P = Pitch (Thread Width, mm) L = Length X = Description (Hex Head Cap Screw)</p>	 <p>10.9 Class</p> <p>M12-1.25 x 50 HHCS</p>
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